palustris had amplexed an *Ambystoma maculatum*. Both pairs were found on the bottom of the pond, in 0.3–0.6 m of water. Although I caught the pairs to examine them and take photographs, the frog maintained the amplexus. Between-species amplexus may incur several costs for both participants. Besides lost feeding opportunity and increased risk for predation there is also the cost of lost mating opportunity.

Two weeks later I visited the site again. This time I found several dozen *R. palustris*, heard males call, and found many egg clutches. I also observed another between-species interaction: as a salamander swam by a male *R. palustris*, the frog turned and amplexed the salamander. The frog quickly released the salamander, however. Further observations are needed to verify whether males are less prone to mating mistakes when conspecific mating opportunities are available.

Submitted by **GERLINDE HÖBEL**, Division of Biological Sciences, 204 Tucker Hall, University of Missouri, Columbia, Missouri 65211, USA; e-mail: hoebelg@missouri.edu.

RANA RUGOSA (Wrinkled Frog). **ENDOPARASITES.** *Rana rugosa* is endemic to Japan, Korea, and northeastern China (Frost [ed.]. 1985. Amphibian Species of the World: A Taxonomic and Geographical Reference. Allen Press, Inc. and The Association of Systematics Collections, Lawrence, Kansas. 732 pp.). It was introduced to Hawaii from Japan in 1895 or 1896 (Bryan 1931. Mid-Pacific Magazine 43:61–64; Oliver and Shaw 1953. Zoologica 38:65–95). The purpose of this note is to report the acanthocephalan *Acanthocephalus bufonis* in *R. rugosa* from Oahu, Hawaii.

One *R. rugosa* (52 mm SVL) was collected 2 May 2000 at Honolulu, Hawaii. It was deposited in the herpetology collection of the University of Michigan, Ann Arbor, Michigan as UMMZ 227582. The esophagus, stomach, small intestine, large intestine, lungs, and urinary bladder were opened and examined separately for helminths under a dissecting microscope. The body cavity was also searched. Two adult acanthocephalans were found in the small intestines. They were each cleared in a drop of concentrated glycerol, identified as *Acanthocephalus bufonis* and subsequently deposited in the United States Parasite Collection, USNPC, Beltsville, Maryland as USNPC 94316.

Acanthocephalus bufonis has an oriental distribution (Kennedy 1982. Can. J. Zool. 60:356–360). It has been reported in *Bufo marinus* from Honolulu, Hawaii by Barton and Pichelin (1999. Parasite 6:269–272). Whether *A. bufonis* reached Hawaii in *B. marinus, R. rugosa* or in an intermediate host is not known. *Acanthocephalus bufonis* in *R. rugosa* is a new host record.

Submitted by **STEPHEN R. GOLDBERG,** Department of Biology, Whittier College, Whittier, California 90608, USA (e-mail: sgoldberg@whittier.edu); **CHARLES R. BURSEY,** Department of Biology, Pennsylvania State University, Shenango Campus, Sharon, Pennsylvania 16146, USA (e-mail: cxb@psu.edu); and **FRED KRAUS,** Bishop Museum, Department of Natural Sciences, 1525 Bernice Street, Honolulu, Hawaii 96817, USA (e-mail: fkraus@hawaii.edu).

TESTUDINES

ACTINEMYS MARMORATA (Pacific Pond Turtle). **DIET.** The diet of *Actinemys marmorata* is known to include a wide variety of items from benthic invertebrates, to plant materials, to carrion (Bury 1986. J. Herpetol. 20:515–521). An opportunistic forager, they often eat the most abundant food resource available (Holland 1985. Herpetol. Rev. 16:112–113). In this note, we provide the first observation of a Pacific Pond Turtle consuming fish eggs.

On 14 May 1997 while conducting a herpetological survey of the Cache Creek drainage in Wolf Creek at the mouth of Quartz Canyon in Lake County, California (USA), one of us (MRJ) observed a spawning aggregation of ca. 100 California Roach (*Lavinia symmetricus*). The fish had schooled into a tight ball ca. 40 cm diam and were spawning over a cobble substrate in 50 cm of water. Closer examination revealed the presence of a Pacific Pond Turtle under this spawning aggregation. The turtle was resting on the cobble substrate and remained motionless except for occasionally retracting its head to avoid being hit by swimming and darting fish. I carefully watched the turtle between 1550–1615 h and soon observed that it was foraging for fish eggs being deposited in the cracks of the substrate. There was no attempt to catch swimming fish as they moved by the turtle's head or bounced off the turtle's head, neck, and front legs. After my observations were completed, I removed the turtle from the spawning aggregation and found that it was an adult female, 145 mm straight-line carapace length.

This record provides another observation of an opportunistic feeding event by a Pacific Pond Turtle; the consumption of fish eggs may also benefit female turtle fitness by providing a rich source of nutrients for their own egg development.

Submitted by **MARK R. JENNINGS**, Rana Resources, 39913 Sharon Avenue, Davis, California 95616-9456, USA, and Research Associate, Department of Herpetology, California Academy of Sciences, Golden Gate Park, California 94118-9961, USA; and **ROGER L. HOTHEM**, U.S. Geological Survey, Western Ecological Research Center, Dixon Field Station, 6924 Tremont Road, Dixon, California 95620-9648, USA.

CHELONIIDAE (Marine Turtle). **NEST PREDATION BY BOBCATS.** A variety of mammal species are known as primary predators (initial excavators) of marine turtle nests in Florida (e.g., Stancyk 1982, *In* Bjorndal (ed), Biology and Conservation of Sea Turtles, pp. 139–152. Smithsonian Institution Press, Washington, D.C.). Raccoons (*Procyon lotor*) are probably the most widespread and destructive nest predator (Stancyk, *op. cit.*), depredating up to 95% of nests in some areas, unless control measures are implemented (Bain et al. 1997. Sea turtle nesting and reproductive success at the Hobe Sound National Wildlife Refuge (Florida), 1972-1995. Report to U.S. Fish and Wildlife Service, ARM Loxahatchee NWR). Spotted Skunks (*Spilogale putorius*), Gray Foxes (*Urocyon cinereoargenteus*), Opossums (*Didelphis virginiana*), and Red Wolves (*Canis rufus*) are other native species that depredate nests, while Nine-banded Armadillos (*Dasypus novemcinctus*), Coyotes (*Canis latrans*), feral swine (*Sus scrofa*), and Red Foxes (*Vulpes vulpes*) are destructive exotic mammal species (Atencio 1994. Proc. Sea Turtle Symp. 13:201–204; Bain et al., *op. cit.*; Drennen et al.

1989. Mar. Turt. Newsl. 1989:7–8; Engeman et al. 2003. Biol. Cons. 113:171–178; Foote et al. 2000. Proc. Sea Turtle Symp. 18:189–190; Helmstetter and Atencio 1997. Endangered Species Update 14:3–5; Lewis *et al.* 1996. Proc. Sea Turtle Symp. 15:162–164; Mroziak et al. 2000. Chel. Cons. Biol. 3:693–698; Rusenko et al. 2000. Proc. Sea Turtle Symp. 18:209–211; Woolard et al. Herpetol. Rev. *in press*; Wright et al. 2000. Proc. Sea Turtle Symp. 12:210–212). Here we provide the first observations of Bobcat (*Felis rufus*) acting as a primary predator (excavator) of marine turtle nests.

We have made observations since 1997 on the beach at Hobe Sound National Wildlife Refuge (HSNWR), Jupiter Island, Florida. HSNWR offers undeveloped and protected beach habitat for nesting by loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*), and green (*Chelonia mydas*) turtles, each of which is listed as threatened or endangered. Our first observation of bobcat excavation and predation of a turtle nest occurred in 2001. In that year 251 of the 1259 loggerhead nests, all 16 green turtle nests, and all 58 leatherback nests were marked for observation, for a total of 325 marked nests. On 10 September, a loggerhead nest was depredated by a bobcat. This was the only bobcat-predated nest during the 2001 nesting season, and it is the first observation of which we are aware where a bobcat excavated and predated the eggs of a marine turtle nest. The destruction of a single nest represented 0.4% of marked loggerhead nests and 0.3% of total marked nests for all marine turtle species.

In 2002, a total of 307 turtle nests were marked for observation; 132 of the 1062 loggerhead nests, all 142 green turtle nests, and all 33 leatherback nests. Two of the marked loggerhead nests were excavated and depredated by bobcats. This represented 1.5% of loggerhead nests and 0.7% of total marked nests on the refuge. Bobcat predation occurred on 29 and 30 July, which is when the maximal number of nests would be expected to be in this beach (e.g., Engeman et al., *op. cit.*).

Raccoons and armadillos are removed at HSNWR in an ongoing effort to protect turtle nests from these most destructive nest predators (Engeman et al., *op. cit.*). A predation rate around 1% by bobcats is negligible, especially when compared to depredation by raccoons and armadillos. While bobcat predation on turtle nests at its current level does not merit remediation, their populations and predation should be simultaneously monitored each year along with those for raccoons and armadillos in case their predation increases (for methodology see Engeman et al., *op. cit.*). On the other hand, if bobcat depredation remains at very low levels, then their presence on the beach may have the beneficial effect of deterring other, potentially more destructive, nest predators.

Submitted by, **R. ERIK MARTIN**, Ecological Associates, Inc., P.O. Box 405, Jensen Beach, Florida 34958, USA; **RICHARD M. ENGEMAN***, USDA/Wildlife Services, National Wildlife Research Center, 4101 LaPorte Ave, Fort Collins, Colorado 80521-2154, USA (e-mail: Richard.M.Engeman@aphis.usda.gov); **HENRY T. SMITH**, Florida Department of Environmental Protection, Florida Park Service, 13798 S.E. Federal Highway, Hobe Sound, Florida 33455, USA; **CARRIE K. CRADY**, Ecological Associates, Inc., P.O. Box 405, Jensen Beach, Florida 34958, USA; **MARGO STAHL**, Hobe Sound NWR, 13640 S.E. Federal Hwy., Hobe Sound, Florida 33455, USA; and **BERNICE CONSTANTIN**, USDA/Wildlife Services, 2820 East University Ave., Gainesville, Florida 32641, USA. *Corresponding author.

GOPHERUS POLYPHEMUS (Gopher Tortoise). **PREDATION.** *Gopherus polyphemus* is eaten by numerous native predators throughout its range (Ernst et al. 1994. Turtles of the United States and Canada. Smithsonian Institution Press, Washington. 578 pp.). Here, we document a non-native reptile species, the Savannah Monitor (*Varanus exanthematicus*), preying upon a juvenile *G. polyphemus* in Florida.

On 22 September 2002, an adult male (37.3 cm SVL, 1.2 kg) *V. exanthematicus* was collected by residents at 1212 Alhambra Way S., St. Petersburg, Pinellas Co., Florida (27°43.39'N, 82°39.10'W), and brought to a staff member at nearby Boyd Hill Nature Park. On 24 September 2002, this *V. exanthematicus* defecated scutes and all four legs of a juvenile *G. polyphemus* (ca. 50 mm CL), as well as body parts of two adult ox beetles (*Strategus antaeus*). The *V. exanthematicus* and prey items were deposited in the Florida Museum of Natural History (UF 135537).

This *V. exanthematicus* was collected in a residential area ca. 335 m SSE of the largest remaining *G. polyphemus* population on the southern Pinellas County peninsula (pers. obs.). *Gopherus polyphemus* is a protected species throughout its range and is listed as a species of special concern in Florida (Moler 1992. Rare and Endangered Biota of Florida, Vol. III. Amphibians and Reptiles, Univ. Press of Florida, Gainesville, 291 pp.). Major threats to the Gopher Tortoise include habitat loss and degradation (Diemer 1986. Herpetologica 42:125–133), but heavy predation on *G. polyphemus* nests and juveniles is also a threat, due to the species' deferred sexual maturity and low fecundity (Diemer 1992. *In* Moler [ed.], Rare and Endangered Biota of Florida, Vol. III. Amphibians and Reptiles, Univ. Press of Florida, Gainesville, pp. 123–127).

Presently, more than 40 non-native herpetofaunal species are reported to be established in Florida (Townsend et al. 2003. Iguana 10:111–118), including three large lizards, the Mexican Black Spiny-tailed Iguana (*Ctenosaura pectinata*), Black Spiny-tailed Iguana (*C. similis*), and Nile Monitor (*Varanus niloticus*) (Campbell 2003. Iguana 10:119–120; Enge et al. 2004, unpubl.; Krysko et al. 2003. Florida Sci. 66:74–79; Townsend et al. 2003. Herpetozoa 16:67–72) that can potentially prey on *G. polyphemus*. Although there is presently no evidence that *V. exanthematicus* has established itself in Florida, this note documents the first predation of a protected reptile species in Florida by a non-native reptile species. Although it is illegal to release nonindigenous animals without a permit from the Florida Fish and Wildlife Conservation Commission (FWC), enforcement difficulties and inadequate regulatory control suggest that the release of non-native fauna will continue to be a major contributor to the state's battle with invasive non-native species.

We thank the collectors and Donna M. Heinrich (Boyd Hill Nature Park) for making the specimen available to us. We also thank Joan E. Berish, Kevin M. Enge, Paul E. Moler (Florida Fish and Wildlife Conservation Commission), and D. Bruce Means (Coastal Plains Institute and Land Conservancy) for helpful comments on this note. Michael C. Thomas (Entomology, Florida Division of Plant Industry) provided insect identification.

Submitted by **AUDREY K. OWENS***, Florida Museum of Natural History, Division of Herpetology, University of Florida,